DOCUMENT RESUME

ED 271 494 TM 860 403

AUTHOR Schack, Gina
TITLE Self-Efficacy for Creative Productivity.
PUB DATE Apr 86
NOTE 14p.; Paper presented at the Annual Meeting of the American Educational Research Association (70th, San Francisco, CA, April 16-20, 1986).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Research/Technical (143) -- Tests/Evaluation Instruments (160)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Academically Gifted; Achievement; Attitude Measures; Creativity; *Creativity Tests; Elementary Secondary Education; Enrichment Activities; Evaluation Criteria; Individual Power; Locus of Control; Multiple Regression Analysis; Predictor Variables; *Productive Thinking; Self Concept; *Self Concept Measures; *Self Evaluation (Individuals); Student Attitudes; *Test Construction; Test Reliability; Test Validity
IDENTIFIERS *Efficacy Scale for Creative Productivity; Efficacy Scale for Overall Creative Productivity; Enrichment Triad Model; *Self Efficacy

ABSTRACT

The Efficacy Scale for Creative Productivity (ESCreP) was developed to measure students' convictions that they could be creative producers. Self-efficacy, an individual's estimation of ability to perform a behavior, is based upon performance accomplishments, vicarious experiences, verbal persuasion, and emotional or physiological arousal. Three types of activities designed to provide enrichment for gifted students are related to efficacy: (1) exploration of topics; (2) training in processes necessary to carry out investigations; and (3) student-initiated investigations of problems. The 40-item ESCreP was pilot tested with 369 gifted students in grades 4 to 12. Test reliability ranged from .71 to .94. Completion of type 3 activities was the best predictor of creative productivity efficacy scores. Years of participation in the gifted program were also significant, but grade level and sex were not. The six-item Efficacy Scale for Overall Creative Productivity (ESOreP), administered to 294 gifted students is grades 4 to 8, measured efficacy at completing a type 3 project, rather than performing the parts of one. Internal consistency was .78 and test-retest reliability was .56. The relationship between the parts versus whole issue was ambiguous. (Both scales and a combined 46-item test are appended.) (GDC)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED271494

SELF-EFFICACY FOR CREATIVE PRODUCTIVITY

Gina Schack, University of Connecticut

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

This document has been reproduced as received from the person or organization originating it.

X Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

G. D. Schack

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

TM 860 403

SELF-EFFICACY FOR CREATIVE PRODUCTIVITY[1]

Gina Schack, University of Connecticut

This research reviews the development of a self-efficacy scale to measure students' conviction that they can be creative producers, the goal of much gifted education (Renzulli, 1977). If the relationship between self-efficacy and creative productivity can be demonstrated, it will have both theoretical and practical implications. It may contribute to a better understanding of the processes used by gifted individuals, and may give direction to instructional efforts that will lead to more gifted behavior by individuals in society.

The Construct of Self-efficacy

Self-efficacy refers to an individual's estimation of his ability to perform a particular behavior. It influences whether the particular behavior will be attempted, the amount of effort that will be expended, and the degree of perseverance in the face of difficulty (Bandura, 1977). There are four sources of information upon which people base self-efficacy judgements. These include, in descending order of impact, performance accomplishments, vicarious experiences, verbal persuasion, and emotional/physiological arousal (Bandura, 1977, 1981, 1982).

The original investigations of the construct of self-efficacy were done by Albert Bandura, working with adult snake phobics (1977). In areas related to health and physical activity, a positive relationship was shown between self-efficacy expectations and subsequent smoking cessation (DiClemente, Prochaska, & Gibertini, 1985), participation in a weight control program (Mitchell & Stuart, 1984), and tennis performance (Barling & Abel, 1983). In the affective area, research has been done relating the construct of self-efficacy to depression (Davis & Yates, 1982), assertiveness (Lee, 1984), pre-school interest development (Stedtnitz, 1985), and career choice (Hackett, 1985).

Other research has investigated the link between self-efficacy and cognitive skills, including writing performance (Meier, McCarthy, & Schmeck, 1984), math achievement (Schunk, 1981, 1982, 1983, 1984), the effect of interventions (Barling & Snipelisky, 1983), and classifications of special populations (Baum, 1985). Gibson & Dembo (1984) extended the investigation of school-related efficacy by researching factors associated with teacher self-efficacy, and Landino (1985) studied the relationship of self-efficacy and accomplishments of university faculty members.

Relationship to Gifted Education

The current investigation is an attempt to extend the application of the self-efficacy construct to the field of gifted education. Those members of society whom history has defined as

---

[1] A symposium presentation at the annual meeting of the American Educational Research Association, San Francisco, April, 1986.

gifted individuals are creative producers, people who have contributed something of value to society that is new or different, or done in a new way (Renzulli, 1978). These people chose to pursue a particular activity, be it scientific, artistic, humanitarian, or physical, and expended energy in the pursuit of their goals, persevering in the face of difficulty. These are the same characteristics Bandura associates with high levels of self-efficacy.

The Enrichment Triad Model for gifted education (Renzulli, 1977) is designed to promote this type of creative productivity in children. Students are encouraged to identify areas of interest, investigate real problems, and come up with original research, performances, or formats for the presentation of new knowledge. Three types of enrichment activities are designed to increase the quantity and quality of creative productivity among children. Type I activities are general exploratory ones, designed to introduce students to topics, questions, and areas of potential interest. Type II activities train students in the processes necessary to carry out successful investigations. Type III enrichment consists of the investigation of real problems in an area of interest and is initiated by the student(s). In the years that the Triad program has been in use, many students have demonstrated creative productivity in the form of Type III projects, while others have not chosen to engage in such behaviors. As the goal of the program is to increase the likelihood that more students will engage in such behaviors, it is of practical importance to understand what factors influence such decisions. Since the qualities associated with adult gifted behavior seem to parallel those postulated for highly efficacious individuals, it is also of theoretical interest to investigate the relationship between self-efficacy and creative productivity.

Initial Instrument Development

Several instruments were developed to investigate the relationship of student self-efficacy as creative producer to completion of Type III projects in Triad gifted programs. According to Bandura's theory, predictors of self-efficacy should include number of previous Type III's completed (performance accomplishments), and years of participation in the gifted program (vicarious experiences and verbal persuasion). Age and sex should not be predictors, according to the theory and most research done to date. In this sample, all students participating in the gifted program were of above average ability (approximately top 20%) and previous research (Reis, 1981) showed no significant difference in quantity or quality of Type III projects based on ability of students within that range.

Three separate but related measures of self-efficacy as creative producer were ultimately investigated. The first was the Efficacy Scale for Creative Productivity (ESCreP; see Appendix A), measuring the constituent parts of the process of completing Type III projects (the variable representing creative productivity). Six areas related to creative productivity were outlined and scale items were developed for each area. These were: problem finding and focusing, use of advanced resources and methodologies, analysis and synthesis of ideas, preparation of final product, presentation to appropriate audience, and ability

to work independently. Items were passed to expert judges, who rated the item's merits. After revision, the 40-item, six scale measure was pilot tested with 369 students in grades four through twelve in eleven schools having Triad gifted programs.

In the pilot testing, internal consistency estimates for the subscales ranged from .71 to .87, with the whole scale giving .94. Components analysis yielded eight factors which generally confirmed the rationally derived subscales. In a further validity study, stepwise regression showed that completion of previous Type III's was the single best predictor of creative productivity efficacy scores. Years participating in the gifted program was a lesser, but still significant, predictor. Grade level and sex were insignificant, as hypothesized. These results seem to support Bandura's assertion that performance accomplishments are the strongest contributor to self-efficacy. They also suggest that participation in gifted programs may enhance students' self-efficacy and, in turn, motivate creative productivity.

The Parts/Whole Question: Subsequent Instrument Development

In preparation for a further investigation, the question arose whether the whole was greater than the sum of the parts in regard to self-efficacy. The ESCreP measured students' confidence at doing the parts of a project, but was that the same as confidence at undertaking the project as a whole? To investigate this question, and aiming for parsimony, the Efficacy Scale for Overall Creative Productivity (ESOCreP) was developed. This six-item scale (see Appendix B) attempted to measure students' self-efficacy at completing a Type III project, rather than performing the parts of one. It was initially administered to a different sample of 294 students in grades 4-8 currently participating in Triad gifted programs. Alpha internal consistency of the ESOCreP at the first administration was .71. For the second administration, the ESCreP and ESOCreP items were mixed randomly on a 46 item scale, which was given to the same students approximately six weeks later. Alpha internal consistency was run separately for the scales, with the longer ESCreP yielding .96 and the six item ESOCreP .78. Test-retest reliability for the ESOCreP, using a subsample of 150 over approximately six weeks, was .56. While this was somewhat lower than might be hoped for, it should be noted that students at the time were participants in Triad programs and were being exposed to experiences designed to encourage them to initiate Type III projects. Many of these students may have been involved in Type III projects at the time, and they were certainly exposed to the modeling of others doing III's and to verbal persuasion. So while no formal intervention was made during the investigation of stability reliability, it cannot be assumed that students were isolated from experiences that could have affected their self-efficacy as creative producers.

The correlation between the ESCreP and the shorter ESOCreP was .86 for the sample of 294, giving an ambiguous answer to the parts/whole question. The high correlation supports the view that the two are very similar. Yet an overlap of 74% (r^2) still leaves 26% of the variance unaccounted for, suggesting that the whole of self-efficacy may indeed be greater than or slightly

different from the sum of the parts. Since data came from the same subjects at the same time, several rival hypotheses can be eliminated. Of course, error due to the low stability reliability may also be obscuring the true relationship. Further investigation of the question should prove interesting for both theoretical and practical reasons.

Predictors of Self-efficacy for Creative Productivity

Stepwise multiple regression was done using both the shorter ESOCreP and the ESCreP as criterion variables, with grade, sex, years in the Triad gifted program, and previous Type III projects completed as predictor variables. When total score on the longer ESCreP scale was used as the criterion variable, none of the predictor variables was significant. Similar regressions were performed using scores from each of the two administrations of the shorter ESOCreP. Again, none of the variables were significant.

At this point, investigation turned to a third measure, a single predictor, as Bandura had done in his initial research. Student response to the item "completing a Type III project" was chosen as being the most direct measure of confidence at doing the target behavior. Stability reliability over a six week period for the single item was .45. Using stepwise regression, significant predictors were number of previous III's and grade level. Number of previous III's had a negative Beta weight, indicating a negative correlation between self-efficacy and number of Type III projects completed. This will be commented upon later.

Discussion

It is both disappointing and puzzling to find contradictory results after promising results from the pilot study. Because regression procedures are sensitive to error variation, the relatively low stability of the scales (.56 on the six-item ESOCreP, .45 on the single item) may have affected the results of the regression procedures. While the pilot and follow-up included entirely different students, most of the schools, and hence gifted teachers and programs, were the same. It is possible that the elimination of four of the original eleven schools might have made a difference, but the seven schools that were retained are considered to more closely model an ideal Triad gifted program. The original sample contained students in grades 4-12, while the follow-up was limited to students in grades 4-8. It could be that the effects of efficacy are more apparent in older students, or after more years in gifted programs encouraging creative productivity.

Another possible explanation for the unexpected results may be that the pilot took place near the end of the school year, when students had been exposed for eight months to performance accomplishments, vicarious experiences, and verbal persuasion regarding creative productivity. The follow-up study took place in the fall of the school year, before many students had begun Type III projects and before they had been involved in many gifted program activities designed to stimulate III's. If this is the case, it suggests that self-efficacy may not be as durable as had originally been thought, and that it may be more reactive

to recent feedback from the environment. Further research on the durability of self-efficacy, in the area of creative productivity and other areas, would be warranted.

The negative correlation between previous Type III's completed and self-efficacy is contrary to what would be predicted by Bandura's theory. The data suggest that the more III's a student does, the less confident he feels at doing them. This finding may be related to a puzzling result from the pilot study, namely that students in gifted programs considered by experts to have the most advanced and sophisticated Type III projects reported lower self-efficacy scores, while students in gifted programs regarded as less rigorous reported the highest scores. One possible explanation is that students may not be regarding the completion of the target behavior (Type III project) as a success. Those students who take on challenging and complex projects and are in programs with high standards may not emerge from the Type III experience feeling as confident of their abilities as students who take on and succeed at easier tasks that are judged by less rigorous standards. To investigate this hypothesis further, it would be necessary to obtain students' subjective reactions to the completion of their Type III projects.

Conclusion

Most research in academic self-efficacy has been correlational. Some experiments have investigated the effects of interventions on subsequent self-efficacy measures, but have not also considered subsequent performance of the behavior itself. Schunk's work (1981, 1982, 1983, 1984) is a notable exception. In a continuation of the research reported here, investigation will be conducted on the effects of a research methodology mini-course, including performance accomplishments related to Type III projects. Outcome variables will include both self-efficacy measures and initiation of the target behavior (Type III projects). Path analysis will be used to estimate the effects of participation in the mini-course on both self-efficacy and subsequent creative productivity, and to study the causal role of self-efficacy. Inclusion of the impact of interventions on both self-efficacy measures and outcome behavior in future investigations should help to clarify the mediating role played by self-efficacy.

References

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavior change. Psychological Review, 84, 191-215.

Bandura, A. (1981). Self-referent thought: A developmental analysis of self-efficacy. In J.H. Flavell & L. Ross (Eds.), Social cognitive development. Cambridge: Cambridge University Press, 1981.

Bandura, A. (1982). Self-efficacy mechanism in human agency. American Psychologist, 37, 122-147.

Barling, J. & Abel, M. (1983). Self-efficacy beliefs and tennis performance. Cognitive Therapy and Research, 7, 265-272.

Barling, J. & Snipelisky, B. (1983). Assessing the determinants of children's academic self-efficacy beliefs: A replication. Cognitive Therapy and Research, 7, 371-376.

Baum, S.M. Learning disabled students with superior cognitive abilities: A validation study of descriptive behaviors. Unpublished doctoral dissertation, University of Connecticut, 1985.

Davis, F.W. & Yates, B.T. (1982). Self-efficacy expectancies versus outcome expectancies as determinants of performance deficits and depressive affect. Cognitive Therapy and Research, 6, 23-35.

DiClemente, C.C., Prochaska, J.O., & Gibertini, M. (1985). Self-efficacy and the stages of self-change of smoking. Cognitive Therapy and Research, 9, 181-200.

Gibson, S. & Dembo, M.H. (1984). Teacher efficacy: A construct validation. Journal of Educational Psychology, 76, 569-582.

Hackett, G. (1985). Role of mathematics self-efficacy in the choice of math-related majors of college women and men: A path analysis. Journal of Counseling Psychology, 32, 47-56.

Landino, R.A. Self-efficacy in university faculty. Unpublished doctoral dissertation, University of Connecticut, 1985.

Lee, C. (1984). Accuracy of efficacy and outcome expectations in predicting performance in a simulated assertiveness task. Cognitive Therapy and Research, 8, 37-48.

Meier, S., McCarthy, P.R., & Schmeck, R.R. (1984). Validity of self-efficacy as a predictor of writing performance. Cognitive Therapy and Research, 8, 107-120.

Mitchell, C. & Stuart, R.B. (1984). Effects of self-efficacy on dropout from obesity treatment. Journal of Consulting and Clinical Psychology, 52, 1100-1101.

Reis, S.M. An analysis of the productivity of gifted students participating in programs using the Revolving Door Identification Model. Unpublished doctoral dissertation, University of Connecticut, 1981.

Renzulli, J.S. (1977). The enrichment triad model: A guide for developing defensible programs for the gifted. Mansfield Center, CT: Creative Learning Press.

Renzulli, J.S. (1978). What makes giftedness? Reexamining a definition. Phi Delta Kappan, 60, 180-184, 261.

Schunk, D.H. (1981). Modeling and attributional effects on children's achievement: A self-efficacy analysis. Journal of Educational Psychology, 73, 93-105.

Schunk, D.H. (1982). Effects of effort attributional feedback on children's perceived self-efficacy and achievement. Journal of Educational Psychology, 74, 548-556.

Schunk, D.H. (1983). Ability versus effort attributional feedback: Differential effects on self-efficacy and achievement. Journal of Educational Psychology, 75, 848-856.

Schunk, D.H. (1984). Enhancing self-efficacy and achievement through rewards and goals: Motivational and informational effects. Journal of Educational Research, 78, 29-34.

Stedtnitz, U. The influence of educational enrichment on self-efficacy in young children. Unpublished doctoral dissertation, University of Connecticut, 1985.

APPENDIX A - PILOT VERSION OF EFFICACY SCALE FOR CREATIVE PRODUCTIVITY

Name: _____ Date: _____

School: _____ Grade: _____

This paper lists forty things that students working on independent projects sometimes do. Think about how confident you feel about doing each of these things--whether or not you've ever done them. For example, look at the first one: "Listing questions about my area of interest." Whether you've ever done that or not, how confident do you feel about listing questions about an interest you might have? Circle the letter that best represents you.

not confident ← a ——— b ——— c ——— d ——— e → very confident

a	b	c	d	e	(1)	Listing questions about my area of interest
a	b	c	d	e	(2)	Identifying something I'm interested in
a	b	c	d	e	(3)	Sensing problems in my school, town, or society
a	b	c	d	e	(4)	Coming up with a research question
a	b	c	d	e	(5)	Narrowing down project ideas to a size I can handle
a	b	c	d	e	(6)	Collecting information about possible areas of interest
a	b	c	d	e	(7)	Seeing ways existing things can be improved
a	b	c	d	e	(8)	Using methods that adults in my field would use
a	b	c	d	e	(9)	Interviewing people
a	b	c	d	e	(10)	Finding different kinds of sources of information
a	b	c	d	e	(11)	Taking notes on what I read
a	b	c	d	e	(12)	Knowing where to look for information on a project
a	b	c	d	e	(13)	Planning and carrying out an experiment in order to answer a research question
a	b	c	d	e	(14)	Learning techniques of adult professionals in my field of interest
a	b	c	d	e	(15)	Finding experts in the community who might help me on my project
a	b	c	d	e	(16)	Answering a research question based on information I've gathered
a	b	c	d	e	(17)	Making decisions based on my information
a	b	c	d	e	(18)	Pulling together information from several sources
a	b	c	d	e	(19)	Making sense out of information I've gathered
a	b	c	d	e	(20)	Drawing conclusions from my information

not confident ← a — b — c — d — e → very confident

a b c d e	(21)	Deciding what information, collected through research, is important in answering my research question
a b c d e	(22)	Choosing the best kind of product for my project
a b c d e	(23)	Preparing a written presentation (article, book, letter to the editor, report, etc.)
a b c d e	(24)	Proofreading written work
a b c d e	(25)	Re-doing part of my project to make it better
a b c d e	(26)	Making charts or posters to illustrate a project
a b c d e	(27)	Planning and practicing an oral presentation (speech, play, talk, debate, etc.)
a b c d e	(28)	Preparing a media presentation (slide show, film-strip, photographs, audio or video tape, etc.)
a b c d e	(29)	Finding a group that would be interested in my project results
a b c d e	(30)	Demonstrating something I've made or done to a group of adults
a b c d e	(31)	Giving a talk about my project to a group of adults
a b c d e	(32)	Making the arrangements to present my project to a group
a b c d e	(33)	Showing a media presentation I've done to a group of adults
a b c d e	(34)	Finding a real-world audience for my project
a b c d e	(35)	Working for several months on the same project
a b c d e	(36)	Working on a project for periods of time without a teacher's help
a b c d e	(37)	Figuring out all the things that need to be done for a project
a b c d e	(38)	Working on a project during some of my free time
a b c d e	(39)	Sticking to a long-range plan for several weeks or months
a b c d e	(40)	Developing a plan and timeline for a project

APPENDIX B - EFFICACY SCALE FOR OVERALL CREATIVE PRODUCTIVITY

Name: _____ Date: _____

School: _____ Grade: _____

Think about how confident you feel about doing each of these things. It doesn't matter if you have ever done them or not. Think about each one and circle the number that shows your confidence to do each one.

****

Not Confident ← 1 — 2 — 3 — 4 — 5 — 6 → Very Confident

I'm sure I could not do it. I'm sure I could do it.

****

1 2 3 4 5 6 (a) Completing a Type III project.

1 2 3 4 5 6 (b) Doing a project that is more advanced than most kids my age would do.

1 2 3 4 5 6 (c) Working on a project that wasn't a class assignment if it was about something I was interested in.

1 2 3 4 5 6 (d) Finding out information or doing research most kids my age couldn't do.

1 2 3 4 5 6 (e) Working on a project on my own or with the help of the teacher of the gifted.

1 2 3 4 5 6 (f) Improving something in my school, town, or world that could be better.

APPENDIX C - COMBINED ESCreP/ESOCreP

Name: _____ Date: _____

School: _____ Grade: _____

Think about how confident you feel about doing each of these things. It doesn't matter if you have ever done them or not. Think about each one and circle the number that shows your confidence to do each one.

****

Not Confident ← 1 — 2 — 3 — 4 — 5 — 6 → Very Confident

I'm sure I <u>could not</u> do it. I'm sure I <u>could</u> do it.

****

1 2 3 4 5 6	(1) Completing a Type III project.
1 2 3 4 5 6	(2) Narrowing down a project idea to a size I can handle.
1 2 3 4 5 6	(3) Developing a plan and timeline for a project.
1 2 3 4 5 6	(4) Drawing conclusions from my information.
1 2 3 4 5 6	(5) Working for several months on the same project.
1 2 3 4 5 6	(6) Using methods that adults in my field would use.
1 2 3 4 5 6	(7) Interviewing people.
1 2 3 4 5 6	(8) Making sense out of information I've gathered.
1 2 3 4 5 6	(9) Proofreading written work.
1 2 3 4 5 6	(10) Choosing the best kind of product for my project.
1 2 3 4 5 6	(11) Planning and practicing an oral presentation (speech, play, talk, debate, etc.).
1 2 3 4 5 6	(12) Listing questions about my area of interest.
1 2 3 4 5 6	(13) Seeing ways existing things can be improved.
1 2 3 4 5 6	(14) Making decisions based on my information.
1 2 3 4 5 6	(15) Knowing where to look for information on a project.
1 2 3 4 5 6	(16) Demonstrating something I've made or done to a group of adults.
1 2 3 4 5 6	(17) Sensing problems in my school, town, or society.
1 2 3 4 5 6	(18) Figuring out all the things that need to be done for a project.
1 2 3 4 5 6	(19) Taking notes on what I read.

1	2	3	4	5	6	(20) Finding a group that would be interested in my project results.
1	2	3	4	5	6	(21) Working on a project during some of my free time.
1	2	3	4	5	6	(22) Making charts or posters to illustrate a project.
1	2	3	4	5	6	(23) Preparing a written presentation (article, book, letter to the editor, report, etc.).
1	2	3	4	5	6	(24) Answering a research question based on information I've gathered.
1	2	3	4	5	6	(25) Finding different kinds of sources of information.
1	2	3	4	5	6	(26) Coming up with a research question.
1	2	3	4	5	6	(27) Giving a talk about my project to a group of adults.
1	2	3	4	5	6	(28) Re-doing part of my project to make it better.
1	2	3	4	5	6	(29) Finding a real-world audience for my project.
1	2	3	4	5	6	(30) Working on a project on my own or with the help of the teacher of the gifted.
1	2	3	4	5	6	(31) Preparing a media presentation (slide show, filmstrip, photographs, audio or video tape, etc.).
1	2	3	4	5	6	(32) Making the arrangements to present my project to a group.
1	2	3	4	5	6	(33) Improving something in my school, town, or world that could be better.
1	2	3	4	5	6	(34) Collecting information about possible areas of interest.
1	2	3	4	5	6	(35) Sticking to a long-range plan for several weeks or months.
1	2	3	4	5	6	(36) Doing a project that is more advanced than most kids my age would do.
1	2	3	4	5	6	(37) Identifying something I'm interested in.
1	2	3	4	5	6	(38) Showing a media presentation I've done to a group of adults.
1	2	3	4	5	6	(39) Planning and carrying out an experiment in order to answer a research question.
1	2	3	4	5	6	(40) Working on a project for periods of time without a teacher's help.
1	2	3	4	5	6	(41) Finding out information or doing research most kids my age couldn't do.
1	2	3	4	5	6	(42) Learning techniques of adult professionals in my field of interest.
1	2	3	4	5	6	(43) Pulling together information from several sources.
1	2	3	4	5	6	(44) Finding experts in the community who might help me on my project.
1	2	3	4	5	6	(45) Working on a project that wasn't a class assignment if it was something I was interested in.
1	2	3	4	5	6	(46) Deciding what information, collected through research, is important in answering my research question.